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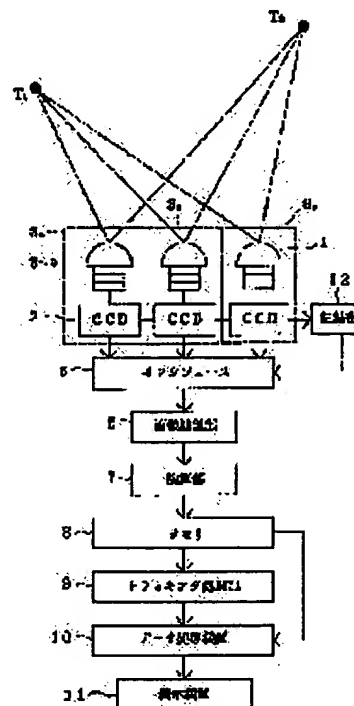
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(54) POSITION MEASURING SYSTEM AND DEVICE USING FISH EYE LENS

(57)Abstract:

PURPOSE: To measure a position by obtaining the cross point of a group of linear equation group corresponding to each target for each target, determining the three-dimensional position coordinates of each target, and then tracking a plurality of targets simultaneously.

CONSTITUTION: An image pick-up device 3 using a fish eye lens 1 is installed for determining light axis and then a system coordinate system (X, Y, Z) is determined arbitrarily at this point. Therefore, system coordinates are given to the fish eye images which are picked up by three image pick-up devices 3a, 3b, and 3c. Targets T1, T2, T3,... within each image are subjected to image processing 6 and are detected and then an operation part 7 obtains three linear equations according to the light axis of the lens 1 on the coordinate system (X, Y, Z). For example, three linear equations passing through the center of a visual field surface between the target T1 and the devices 3a, 3b, and 3c are obtained. Namely, the number corresponding to the number of lenses 1, namely each linear equation group consisting of three linear equations is obtained for the targets T1, T2, T3,... The three-dimensional position coordinates are calculated according to the cross points of the linear equation groups.



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